

Pre-Appeal Brief Request for Review

NOV 26 2008

Application Number: 10/692,755

Applicant : Dr. Rusi P. Taleyarkhan

The applicant respectfully submits that the rejections of the above application are not based on fact and accordingly request review by the conference.

SUMMARY

The applicant respectfully submits that the examiner's section 112 rejections are not consistent with fact as:

- The alleged omissions from disclosure presented as reasons for rejection are established in the background Art and available to those of ordinary skill in the Art.
- Rejection of multiple replications omit to justify basis for such rejection.
- Rejection omits to recognize wording in Specification.
- Insufficient antecedent has been corrected in an amendment.

The applicant respectfully submits that the examiner's sections 102/103 rejections are not consistent with fact as:

- Rejections omit to recognize traverse of the same technologies in prior Office Action response.
- Further evidence is presented on the relevant Background Art for clarifications in the submission of September 25, 2008, that underscores the novelty and unobvious characteristics of the invention relative to these technologies in the background Art.

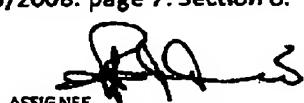
Applicant agreed with the examiner on duplicate claims for 34 and 44, and proposed amendments to correct this deficiency.

Affidavits by three separate replications were presented in the submission of September 25, 2008, a further validation - not acknowledged in the advisory action.

1. 112 Rejections

1. In his rejection the examiner omits to show why conditions for a D-T reaction are not subsumed in the conditions for a D-D reaction as submitted by the applicant. Conversely, the applicant has submitted from the background Art, that conditions for D-T reactions are subsumed by conditions for D-D reactions and establishment of conditions for D-D suffice for D-T reactions. Ref: OAR 9/25/2008: page: 3 Section 1.
2. In his rejection the examiner omits to state the reasons why these later replications do not further support probity and enablement. The Probity and enablement was already established in the IDS filed 27 October 2007. Please see OAR 9/25/2008 page 3- 5: section 2.
3. 35 USC 112 Rejection Claim 34, 42 (item 5) Rejection omits recognition of the background Art in conjunction with the Disclosure. Exposition of the related background art was submitted in OAR of 9/25/2008. Please see:
 - a. The tensioned state in OAR of 9/25/2008 page 5: Section 3 and in the published specification in particular para: 125, as well as in paras: 126, 134, 135, 144, and 205;
 - b. For "imploding said bubbles substantially filled with vapor" OAR of 9/25/2008 page 5-6: Section 4 and published Specification in particular para: 72, as well as in paras: 56, 63, 65, 67 and 122.;
 - c. For "synchronizing neutron impact" OAR of 9/25/2008 page 6: Section 5 and published Specification Fig 3, and paras: 80, 92, 93, 126, 128 and 131.
4. 35 USC 112 Rejection Claims 34-46 (item 6/7/8): Rejection omits recognition of the specification stating optional degassing, as the working liquid may already be substantially free of gas. Please refer to published Specification paras: 68, 119, 137, and 156.
5. 35 USC 112 Rejection Claims 44 (item 8) A proposed amendment to correct the Insufficient antecedent has been submitted. Please refer to OAR 9/25/2008 Page 7: Section 7 and in the related claims: page 17: Claim 34: Line 5.
6. 35 USC 112 Rejection Claims 46 (item 8) Rejection omits recognition of the background Art. Please see published Specification: Paras: 66, 236-241. This is further clarified in OAR 9/25/2008: page 7: Section 8.

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2. 102/103 Rejections

The prior office action response of 12/27/2006 addressed and traversed the distinct differences between i) Puttermann and the present invention, and ii) Flynn and the present invention. Both those items of the background Art use single bubble technologies with distinctly different characterization. applicant submits that:

- i) Puttermann and Margulis use the same technological approach. Please see Table 1 herein for a comparison. Moreover this technology contrast with the present invention. Please see OAR of 12/27/2006 pages 24, 39, 40, 41, 42 and further clarified in the OAR of 9/25/2008 Section 9 pages 7-9.
- ii) Flynn and Lipson use the same technological approach. Please see Table 2 herein for a comparison. Moreover this technology contrast with the present invention. Please see OAR of 12/27/2006 pages 18, 22, 23, 24, 38, 39, 41, 42 and further clarified in the OAR of 9/25/2008 Section 10 pages 10-11.

The applicant submits that traverse of Puttermann and Flynn is equivalent to the traverse of Margulis and Lipson. Moreover, the OAR of 9/25/2008 provides further evidence of the contrast between the present invention and each of these two technologies. A direct comparison of the radically distinct differences and teachings of the present Application versus that of the prior art cited by Examiner is presented in Table 3.

Therefore:

- I. 35USC 102 Rejection Claims 34-40, 42, 44, 45 Margulis has been traversed as this objection is identical to the objection raised by the examiner in the prior OA of 9/27/2005 in which the examiner cites the Art of Puttermann. In the Puttermann Art as in Margulis, deliberate D and /or T gas is added to the test fluid being subjected to acoustic vibrations. For driving the bubbles to produce fusion. This was traversed with the submission of 12/27/2006 specifically 24, 39, 40, 41, 42. Moreover further clarifications have been provided to contrast this technology with the present invention.
- II. 35USC 102 Rejection Claims 34-40, 42, 44, 45 with regard to Lipson has been traversed as the objection is identical to the objection raised by the examiner in the prior OA of 9/27/2005 in which the examiner cites the Art of Flynn. Moreover further clarifications have been provided to contrast this technology with the present invention. In the Art of Lipson as for Flynn, acoustic horns are dipped into liquids of the test cell containing D-T gas filled liquids and are therefore distinct from the present invention. This was traversed with the submission of 12/27/2006. specifically pages 18, 22, 23, 24, 38, 39, 41, 42.
- III. 35USC 103 Rejection Claim 41: This rejection is improper first as from I, II above. Further, as the combination of these is not taught in the Art and furthermore both Margulis and Lipson are enabled by intentionally saturated gases in contrast to the present invention. Please see OAR 9/25/2008 page 11: section 11.
- IV. 35USC 103 Rejection Claim 43, 46: This rejection is improper for in addition to the reasoned above, Didenko is preceded by the priority date of the invention. Please see OAR 9/25/2008 page 11-12: section 12.

3. Duplicate Claims

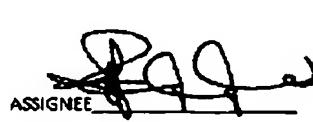
The applicant has proposed a correction for this deficiency in claim 34 in OAR 9/25/2008 pp17: Line 5-6.

4. Affidavits

In addition to the technical papers submitted to the Office as support for replications of the invention in IDS of 6/8/2007, the applicant submitted affidavits from the authors of those papers as further support in the OAR of 9/25/2008. These are not acknowledged in the Advisory Action of 10/17/2008 sections 8/9/10, although they provide additional probity and enablement for the invention.

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TABLE 1: Commonality and Comparison of characteristics of cited prior art teachings of Puttermann et al. and Margulis

Parameter	Puttermann et al.	Margulis
Material to be fused	D and/or T "gas" bubble and inert gas deliberately introduced in center of flask.	D and/or T gas bubbles along with inert gas deliberately injected into liquid of reaction chamber.
Number of bubbles	1	1+ (unspecified)
Non-condensable gas content of bubble	~100% (bubbles substantially filled with non-condensable gas)	~100% (bubbles substantially filled with non-condensable gas)
Liquid Type in terms of accommodation coefficient.	Low (~0.1) accommodation coefficient type - water	Low (~0.1) accommodation coefficient type - water
Neutron or alpha based nucleation of bubbles?	Impossible. Fusion neutrons, if generated occur when the liquid is in state of compression and as such it is impossible to use the neutrons from D-D or D-T fusion to nucleate bubbles.	Impossible. Fusion neutrons, if generated occur when the liquid is in state of compression and as such it is impossible to use the neutrons from D-D or D-T fusion to nucleate bubbles.
Time-span of gas-filled bubbles	Indefinite; bubble in center of flask is deliberately left till it gets depleted of D and/or T contents.	Indefinite; bubbles in reaction chamber are deliberately left there till they are depleted of D and/or T contents.
Mode of acoustic energy delivery	Piezoelectric element on outside of reaction chamber.	Piezoelectric element on outside of reaction chamber.
Time-synchronization of acoustic waves with neutron or alpha based nucleation of tensioned liquid?	No	No

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Table 2: Commonality and Comparison of characteristics of cited prior art teachings of H. Flynn and A. Lipson

Parameter	Flynn	Lipson
Material to be fused	D and/or T gas deliberately injected to saturation into working fluid	D and/or T gas and atoms of heavy water loaded into the heavy metal (Pd) of the vibrating horn tip.
Mode of acoustic energy delivery	Multiple acoustic horns with metal tips dipped into D/T gas filled liquid.	Single acoustic horn metal tip dipped into D/T gas filled liquid.
Number of bubbles	Random in number dissolved in liquid.	Random in number dissolved in liquid.
Time synchronization of acoustic waves with neutron or alpha based nucleation of tensioned liquid?	No	No
Non-condensable gas content of bubbles	~100% (No effort or teaching to degas the liquid)	~100% (No effort or teaching to degas the liquid)
Liquid Type in terms of accommodation coefficient.	Low (~0.1) accommodation coefficient type – water or liquid metals	Low (~0.1) accommodation coefficient type – heavy water
Neutron or alpha based nucleation of bubbles?	Impossible. Fusion neutrons emanate when the liquid is in state of compression and as such it is impossible to use the neutrons from D-D or D-T fusion to nucleate bubbles.	Impossible. Fusion neutrons, if generated occur when the liquid is in state of compression and as such it is impossible to use the neutrons from D-D or D-T fusion to nucleate bubbles.
Time-span of gas-filled bubbles	Indefinite; bubbles in reaction chamber are deliberately left there till the D and/or T atoms are depleted.	Indefinite; bubbles in reaction chamber are deliberately left there till the D and/or T atoms are depleted.

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Table 3: Examiner Overlooked Key Differences between 10,692,755 and cited prior art teachings of Puttermann, Margulis, H. Flynn and A. Lipson

Parameter	10/692,755	Prior Art Cited (Puttermann, Margulis, Flynn, Lipson)
Operability of invention demonstrated?	Yes. Evidence presented of operability in major scientific journals per IDS filings.	No evidence of operability of claims.
Independently replicated per teachings of application by practitioners with ordinary skill?	Yes. Three signed affidavits submitted to this effect per 9.25.08 OAR. Preceded by corresponding technical papers submitted in an IDS.	No.
Material to be fused	D and/or T "atoms" of "vapor" molecules of working liquid itself. No deliberate injection or saturation with externally added D and/or T gas.	D and/or T "gas" and atoms of heavy water.
Mode of acoustic energy delivery	Co-ordinated, synchronized acoustically induced tension metastability together with incident MeV scale nuclear particles.	Acoustic horn metal tip(s) dipped into D/T gas filled liquid or acoustic energy imparted to gas-filled bubble(s); NO teaching of use of synchronized external or internal nuclear particles.
Number of bubbles	Cluster of several hundred bubbles formed on-demand by known flux of incident neutrons or other stated nuclear particles per Specification.	Either single (Puttermann) or Randomly inserted to saturate liquid by dissolved D/T gas in liquid.
Time synchronization of acoustic waves with neutron or alpha based nucleation of tensioned liquid?	Yes.	No
Non-condensable gas content of bubbles	Substantially degassed liquid per Specification.	~100% (No effort or teaching to degas the liquid)
Liquid Type in terms of accommodation coefficient.	High (~1.0) accommodation coefficient type – water or liquid metals.	Low (~0.1) accommodation coefficient type – such as water or liquid metals.
Neutron or alpha based nucleation of bubbles?	Yes.	Impossible. Fusion neutrons, if generated occur when the liquid is in state of compression and as such it is impossible to use the neutrons from D-D or D-T fusion to nucleate bubbles.
Time-span of bubbles bubbles	Bubbles are formed on-demand and are vapor (not gas) filled which re-condense within milliseconds as per teaching.	Indefinite; bubbles in reaction chamber are deliberately left there till the D and/or T atoms are depleted.

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